UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/892,880	06/28/2001	James S. Watkins	5793.3067-00	3039

22852 7590 09/28/2006	EXAMINER
FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER LLP	CHANKONG, DOHM

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ART UNIT	PAPER NUMBER
2152	

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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/892,880	WATKINS ET AL.
	Examiner	Art Unit	
	Dohm Chankong	2152	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>09 August 2006</u>.

2a)☒ This action is **FINAL.**   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-7 and 9-15</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-7 and 9-15</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

1>   This action is in response to Applicant's amendment, filed 8.9.2006. Claims 1 and 9 are

amended. Claims 1-7 and 9-15 are presented for further examination.

2>   This is a final rejection.

Response to Arguments

3>   Applicant's arguments with respect to claims 1-7 and 9-15 have been considered but are

moot in view of the new ground(s) of rejection necessitated by Applicant's amendment.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art
> are such that the subject matter as a whole would have been obvious at the time the invention was made to a
> person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be
> negatived by the manner in which the invention was made.

4>   Claims 1-4, 7, 9-13 and 15 are rejected under 35 U.S.C § 103(a) as being unpatentable

over Okanoya et al, U.S Patent No. 6.128.657 ["Okanoya"], in view of Vahalia et al, U.S

Patent No. 6.192.408 ["Vahalia"], in further view of Helms, U.S Patent Publication

2002|0078183.

5>   As to claim 1, Okanoya discloses a data management system that communicates with

a client terminal [abstract], the system comprising:

an virtual address connection to which the client terminal sends a request reflecting a

file transfer function with respect to a particular data file identified by the request [Figure 3 |

column 6 «lines 58-65» : Okanoya does not expressly disclose that the address is virtual,

however it is implied from the fact that all client requests are sent to the same address and

are then translated to the specific network addresses of the servers];

a plurality of file server devices [Figure 32 «items 210, 220, 230»], capable of

responding to all requests received by the address connection [Figure 32 «item 201» | column

21 «lines 12-14»], including performing the file transfer function requested by the client

terminal [column 7 «lines 6-8»], and wherein each of the plurality of file server devices has

access to a common storage device that stores the particular data file to be transferred in

accordance with the client request, such that each server device's ability to access the

common storage device is the same [Figure 32 «item 201» | column 21 «lines 12-14»];

a load balancer, associated with the address connection, for receiving the request and

for selecting one of the plurality of server devices to perform the requested function [column

6 «lines 6-24»].

However, Okanoya does not a data share unit or that the file server devices

(Okanoya's servers) only perform file input-output type functions.

6>   The function disclosed, limiting the file server devices to performing only file input-

output type functions, is well known in the art. Limiting network computing device

functionality such that they only perform particular functions describes a device that is known in the art as a "thin device".

For example, Helms discloses that thin servers are servers that only support a particular function such as access to files on a storage device [0003]. The purpose of limiting the functionality is obvious, providing a cost-efficient solution to required functions while excluding those functions that are not necessary for proper operations of the server. Thus it would have been obvious to one of ordinary skill in the art to modify Okanoya servers with the thin server teaching, providing an optimized server device at a lower cost solution [Helms, 0003].

7>   With respect to the data share unit, the concept of preventing simultaneous access to the same storage location is well known in the art. Such a function is demonstrated, for example, by obtaining exclusive locks over files so as to insure no other server can access the file while another server has access. Vahalia discloses such a feature [column 2 «lines 58-65»]. It would have been obvious to one of ordinary skill in the art to incorporate Vahalia's file lock feature into Okanoya because this feature is well known in the art for preventing corrupted files that result from multiple accesses to the same file by different servers.

8>   As to claim 2, Okanoya discloses the plurality of file server devices operating in parallel [Figure 32].

9>   As to claims 3 and 4, Okanoya discloses the request is a data file request, wherein the

client terminal sends all requests to the virtual address connection [column 6 «lines 58-65»]

and that the load balancer determines the one of the plurality of file server devices that will

perform the server function requested by each of the plurality of client terminals [column 6

«lines 6-24»].

10>   As to claim 7, Okanoya discloses a load balancer determining the file server device

that will perform the function based on a current processing load of each server device

[column 6 «lines 6-24»].

11>   As to claims 9-12 and 15, as they do not teach or further define over the previously

claimed limitations, they are rejected for at least the same reasons set forth for claims 1-4 and

7.

12>   Claims 5, 6, 13 and 14 are rejected under 35 U.S.C § 103(a) as being unpatentable over

Okanoya, Vahalia, and Helms in further view of Bhaskaran et al, U.S Patent No. 6.601.084

["Bhaskaran"].

13>   As to claims 5 and 13, Okanoya discloses load balancing but do not explicitly disclose

that the load balancer randomly determines the file server device that will perform the server

function.

14>   Bhaskaran discloses that load balancing based on random determination is well known and common in the art [column 2 «lines 30-34»]. As such, the application of random determination in Vahalia and Srivastava's load balancer basically amounts to a design choice and does not provide an inventive step over what is known and ubiquitous in the art. Therefore, it would have been obvious to one of ordinary skill in the art to incorporate random determination for Okanoya's load balancer to increase the functionality of the balancer in a way that is well known and expected in the art.

15>   As to claims 6 and 14, Okanoya does not disclose load balancing according to a predetermined rotational order.

16>   Similar to the random determination load balancing, the use rotational or sequential selection principles in a load balancer is well known in the art and there application in a load balancer is a design choice and not an inventive or patentable step. Bhaskaran discloses utilizing sequential selection as a load balancing technique [column 2 «lines 30-34»]. It would have been obvious to one of ordinary skill in the art to incorporate sequential selection in Okanoya's network file system to increase the functionality of their load balancer in a way that is common and well known in the art.

17>   Claims 1-4, 7, 9-13 and 15 are rejected under 35 U.S.C § 103(a) as being unpatentable over Yousefi'zadeh, U.S Patent No. 6.950.848, in view of Srivastava, U.S Patent No. 6.684.331, in further view of Helms, U.S Patent Publication 2002|0078183.

18>   As to claim 1, Yousefi'zadeh discloses a data management system that communicates

with a client terminal, the system comprising:

an address connection to which the client terminal sends a request reflecting a file

transfer function with respect to a particular data file identified by the request [Figure 1 |

column 1 «lines 58-66» : clients submitting requests to servers, 18, to obtain files stored in

common storage, 26];

a plurality of file server devices [Figure 1 «items 24»], capable of responding to all

requests received by the address connection [column 5 «lines 40-47»], including performing

the file transfer function requested by the client terminal [column 5 «lines 40-47»], and

wherein each of the plurality of file server devices has access to a common storage device that

stores the particular data file to be transferred in accordance with the client request, such that

each server device's ability to access the common storage device is the same [Figure 1 «item

26» | column 4 «lines 46-57» : the database server all having the same ability to access the

database since the database servers have the same view of the database];

a load balancer, associated with the address connection, for receiving the request and

for selecting one of the plurality of server devices to perform the requested function [figure 1

«item 32» | column 4 «line 67» to column 5 «line 47»];

wherein the load balancer routes the request to the selected server device to perform

the requested function, and wherein the selected server device accesses the common storage

device to transfer the particular data file identified by the request [column 4 «lines 26-29» |

column 5 «lines 40-47»]; and

a data share unit for preventing more than one of the plurality of file server devices

from simultaneously accessing the same storage location of the common server storage

device [column 22 «lines 19-37» : functionality to insure that database servers do not

overwrite each other's transactions at the same time].

However, Yousefi'zadeh does not explicitly disclose a virtual address or that the file

server devices (Yousefi'zadeh's database servers) only perform file input-output type

functions.

19>   The function disclosed, limiting the file server devices to performing only file input-

output type functions, is well known in the art. Limiting network computing device

functionality such that they only perform particular functions describes a device that is

known in the art as a "thin device".

For example, Helms discloses that thin servers are servers that only support a

particular function such as access to files on a storage device [0003]. The purpose of limiting

the functionality is obvious, providing a cost-efficient solution to required functions while

excluding those functions that are not necessary for proper operations of the server. Thus it

would have been obvious to one of ordinary skill in the art to modify Yousefi'zadeh's

database servers with the thin server teaching, providing an optimized server device at a

lower cost solution [Helms, 0003].

20>   Yousefi'zadeh does not expressly disclose utilizing a virtual address. However, the

use of a virtual address with a load balancer is well known in art for providing several

advantages such as dynamic balancing and a simple implementation for the client [clients

only need to know one virtual address to access the file].

In this regard, Srivastava is directed towards a providing users access to a group of

servers. Srivastava discloses:

a virtual address connection and a load balancer, associated with the virtual address

connection, for receiving the request and for selecting one of the plurality of server devices to

perform the requested function, wherein the load balancer routes the request to the selected

server device [column 9 «lines 50-67»].

Thus the combination of Yousefi'zadeh and Srivastava would enable a virtual IP

address for which the client sends a request (provided by Srivastava) to enable selection of

the appropriate database, each having access to any file in common storage (Vahalia).

Srivastava's virtual IP address functionality provides users access to the plurality of data

movers with the use of a single virtual IP address and further enabling enhanced scalability

of Yousefi'zadeh's file server system.

Therefore, it would have been obvious to one of ordinary skill in the incorporate

Srivastava's virtual address capabilities into Yousefi'zadeh's database system for the

advantages discussed. Srivastava's virtual IP address also furthers Yousefi'zadeh's goals of

scaling server capacity [see Yousefi'zadeh, column 2 «lines 21-30»].

21>   As to claim 2, Yousefi'zadeh discloses the plurality of file server devices operating in

parallel [Figure 1 «item 24»].

22>   As to claims 3 and 4, Yousefi'zadeh discloses that the load balancer determines the

one of the plurality of file server devices that will perform the server function requested by

each of the plurality of client terminals [column 4 «line 64» to column 5 «line 5»].

        Yousefi'zadeh does not disclose a virtual address connection. However, see the

rejection of claim 1 with respect to the virtual address connection.

23>   As to claim 7, Yousefi'zadeh discloses a load balancer determining the file server

device that will perform the function based on a current processing load of each server device

[column 5 «lines 20-39»].

24>   As to claims 9-12 and 15, as they do not teach or further define over the previously

claimed limitations, they are rejected for at least the same reasons set forth for claims 1-4 and

7.

25>   Claims 5, 6, 13 and 14 are rejected under 35 U.S.C § 103(a) as being unpatentable over

Yousefi'zadeh, Srivastava, and Helms in further view of Bhaskaran et al, U.S Patent No.

6.601.084 ["Bhaskaran"].

26>   As to claims 5 and 13, Yousefi'zadeh discloses load balancing but do not explicitly

disclose that the load balancer randomly determines the file server device that will perform

the server function.

27>   Bhaskaran discloses that load balancing based on random determination is well known and common in the art [column 2 «lines 30-34»]. As such, the application of random determination in Vahalia and Srivastava's load balancer basically amounts to a design choice and does not provide an inventive step over what is known and ubiquitous in the art. Therefore, it would have been obvious to one of ordinary skill in the art to incorporate random determination for Yousefi'zadeh's load balancer to increase the functionality of the balancer in a way that is well known and expected in the art.

28>   As to claims 6 and 14, Yousefi'zadeh does not disclose load balancing according to a predetermined rotational order.

29>   Similar to the random determination load balancing, the use rotational or sequential selection principles in a load balancer is well known in the art and there application in a load balancer is a design choice and not an inventive or patentable step. Bhaskaran discloses utilizing sequential selection as a load balancing technique [column 2 «lines 30-34»]. It would have been obvious to one of ordinary skill in the art to incorporate sequential selection in Yousefi'zadeh's network file system to increase the functionality of their load balancer in a way that is common and well known in the art.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this

Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the

advisory action. In no event, however, will the statutory period for reply expire later than

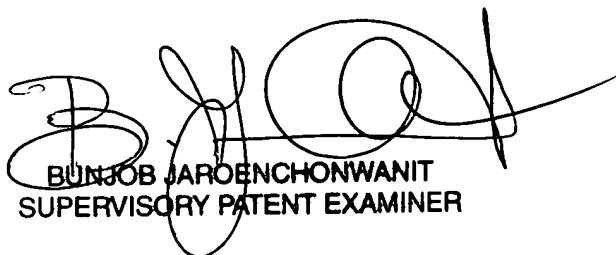SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Dohm Chankong whose telephone number is 571.272.3942.

The examiner can normally be reached on Tuesday-Friday [7:30 AM to 4:30 PM].

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Bunjob Jaroenchonwanit can be reached on 571.272.3913. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published

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access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-

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OR CANADA) or 571-272-1000.

DC

BUNJOB JAROENCHONWANIT
SUPERVISORY PATENT EXAMINER